

Notice of Allowability

Application No.

09/683,679

Examiner

John M. Villecco

Applicant(s)

BARNA ET AL.

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the after-final amendment filed on March 3, 2006.
2. ☒ The allowed claim(s) is/are 1-15, 17, 18, 21, 23, 25, 27-29, 31 and 32 (renumbered claims 1-24).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. Upon an updated search the examiner found prior art, which was not available to the examiner at the time of examination, that the examiner felt could be used against claims 18 and 29 of the present application. Since this newly found prior art has a common assignee and cannot be used in a 103 rejection, the examiner suggested rolling in objected to subject matter from claims 19 and 30 into claims 18 and 29, respectively to overcome the newly found prior art (U.S. Patent No. 7,005,6278 to Rossi).

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Gianni Minutoli on March 16, 2006.

The application has been amended as follows:

- At the end of claim 18, please delete the period ".", and add the phrase -- , and wherein one of said plurality of control parts is a voltage clamp which is turned off when not in use. --.
- At the end of claim 29, please delete the period ".", and add the phrase -- , wherein the bias signals include a clamped signal. --.
- Please cancel claims 19 and 30.

For further clarification claims 18 and 29 should read.

18. An image sensor, comprising:

an array of photosensitive pixels; and

timing and control logic, having a plurality of control parts, said plurality of control parts individually controllable and turned off when not in use,

wherein said control part includes a controllable bias element which is turned off to remove said bias when not in use,

and wherein one of said plurality of control parts is a voltage clamp which is turned off when not in use.

29. A method of acquiring an image, comprising:

producing bias electrical values to be used as part of acquiring image signals; and turning off said bias electrical signals at times during the acquiring when the biases are not needed; wherein the bias signals include a clamped signal.

EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

3. Claims 1-14, 17, 18, 21, 23, 25, 27-29, 31, and 32 (renumbered claims 1-24) are allowed.

4. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, the primary reason for allowance is that the prior art fails to teach or reasonably suggest that each of the column readout part, said gain stage, and said output driving

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stage include at least one element which optimizes a power consumption of the stage independent of other stages.

As for claim 17, the primary reason for allowance is that the prior art fails to teach or reasonably suggest that the A/D converter are successive approximation A/D converters

With regard to claim 18, the primary reason for allowance is that the prior art fails to teach or reasonably suggest that one of the plurality of control parts is a voltage clamp which is turned off when not in use.

Regarding claim 21, the primary reason for allowance is that the prior art fails to teach or reasonably suggest that the element includes an optimized gain element with first and second unity gain buffers, and a gain stage, said first and second unity gain buffers isolating the gain stage from the readout bus.

As for claim 25, the primary reason for allowance is that the prior art fails to teach or reasonably suggest that each of the converter reference voltage, clamped voltage, and common mode feedback voltage are produced by separate, controllable sources, which are turned off when not in use.

Regarding claim 27, the primary reason for allowance is that the prior art fails to teach or reasonably suggest that the second timing is 50 percent of the way through a conversion cycle represented by the first timing.

As for claim 29, the primary reason for allowance is that the prior art fails to teach or reasonably suggest turning off the bias electrical signals at times during the acquiring of image signals when the biases are not needed, wherein the bias signals include a clamped signal.

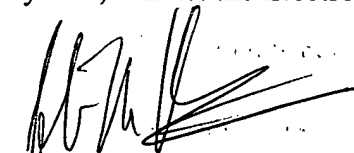
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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

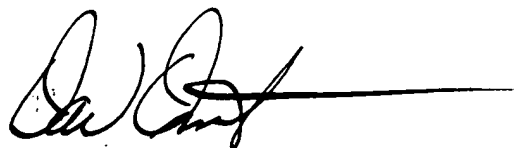
Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Villecco whose telephone number is (571) 272-7319. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John M. Villecco
March 16, 2006



DAVID OMETZ
SUPERVISORY PATENT EXAMINER